

APPENDIX:

The Appendix includes the following item:

- a verified English translation of Japanese Application No. 037819/1999

**VERIFICATION OF TRANSLATION****RECEIVED**

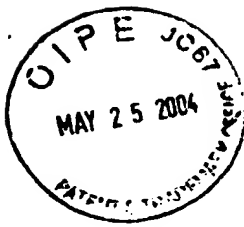
MAY 28 2004

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certify that I am familiar with the English and Japanese
languages, and to the best of my knowledge and belief the
following is a true translation of the officially certified copy of
the Japanese Patent Application, Heisei 11-037819.

This 18 day of May, 2004

Minoru KUDOH



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This is to certify that the annexed is a true copy of the
following application as filed with this Office.

Date of Application:	February 16, 1999
Application Number:	No. Heisei 11-037819
Applicant(s):	NEC Corporation

This 24 day of September, 1999
Takahiko KONDO
Commissioner,
Patent Office

(seal)

Certificate No. Hei11-3064816

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[Document Name] Specification

[Title of the Invention] OPERATION METHOD OF PORTABLE PHONE AND APPARATUS FOR THE SAME

[Scope of Patent to be Claimed]

[Claim 1] An operation method of a portable phone comprising the step of:

executing a non-dialing operation other than a dialing operation by operating an un-specified dial key other than specified dial keys.

[Claim 2] An operation method of a portable phone according to claim 1, characterized in that the specified dial key is one selected from "0", "1" and "#".

[Claim 3] An operation method of a portable phone according to claim 1, characterized in that the specific dial key is only one.

[Claim 4] An operation method of a portable phone according to claim 1, characterized in that the non-dialing operation is a telephone number searching operation.

[Claim 5] An operation method of a portable phone according to claim 4, characterized in that the said non-dialing operation is a telephone number search operation.

[Claim 6] An operation method of a portable phone according to claim 1, characterized in that a symbol corresponding to the non-dialing operation is represented together with a digit on the un-specified dial key corresponding to the non-dialing operation, and the symbol is not a digit.

[Claim 7] An operation method of a portable phone according to claim 1, characterized in that the non-dialing operation is a telephone number searching operation.

[Claim 8] An operation method of a portable phone according to claim 7, characterized in that the number of un-specified dial keys is at least two, one of said two non-specifying dial keys corresponds to the non-dialing operation to scroll the list to the descending order, and the other of said two non-specifying dial keys corresponds to the non-dialing operation to scroll the list to the ascending order.

[Claim 9] An operation apparatus of a portable phone comprising:

dial keys; and

a processing unit carrying out a non-dialing operation other than a dialing operation when an un-specified dial key which is not a specified dial key is operated.

[Claim 10] An operation apparatus of a portable phone according to claim 9, characterized by further comprising:

a storage unit for storing names corresponding to a plurality of telephone numbers;

a display unit for displaying the names stored in the storage unit; and

a processing unit controlling the display unit to display the names when the non-specifying dial key is operated.

[Claim 11] An operation apparatus of a portable phone according to claim 9, characterized in that the processing unit controls the display unit to display the names in the descending order when one of the non-specifying dial keys is operated, and to display the names in the ascending order when the other one of the non-specifying dial keys is operated.

[Claim 12] An operation apparatus of a portable phone according to claim 9, characterized further comprising a recording medium,

wherein the recording medium stores a telephone number search program.

[Claim 13] An operation apparatus of a portable phone according to claim 9, characterized further comprising a recording medium,

wherein the recording medium stores a program to execute a step of carrying out the non-dialing operation other than the dialing operation when the un-specified dial key which is not a dial key is operated.

[Claim 14] An operation apparatus of a portable phone according to claim 13, characterized in that the recording medium is detachable to the concerned telephone.

[Detailed explanation of the invention]

[0001]

[Technical field which the invention belongs to]

The present invention relates to an operation method and operation apparatus of a portable phone, and more particularly to an operation method and operation apparatus of a portable phone in which a key structure is considered to be suitable for the portable phone of a further small size.

[0002]

[Conventional technique]

A small size portable phone has a housing formed in a small size. In the small housing, a key is small and a pitch between the keys is narrow. Moreover, when multiple functions are further achieved, it is more difficult to arrange a large number of keys which increase in accordance to the number of functions.

[0003]

As for the function with a high use frequency such as a telephone number searching operation, the operation is simplified to make it easy for a user to use the function. However, the multiple functions requires the user a complicated operation even if the function has a high use frequency. Therefore, another input means other than keys is often necessary.

[0004]

When the user uses the telephone number searching function with the high use frequency, it is desired not to increase the number of keys. Also, it is desired that the key operation is simple.

[0005]

[Problem which the invention tries to solve]

An object of the present invention is to provide an operation method and operation apparatus of a portable phone in which the number of the keys is not increased for the operation.

Another object of the present invention is to provide an operation method and operation apparatus of a portable phone in which the number of the keys is not increased for the operation and the key operation is simple.

[0006]

[Means to solve the problems]

An operation apparatus of a portable phone according to the present invention, comprises the step of executing a non-dialing operation other than a dialing operation by operating an un-specified dial key other than specified dial keys. Thus, it is possible to allocate a function other than the dialing operation to the dial keys. The specified dial key is "0", "1" or "#". it is desirable that the specific dial key is only one. It is especially effective in the accomplishment of the present invention that the non-dialing operation is a telephone number searching operation.

[0007]

A symbol corresponding to the non-dialing operation is represented together with a digit on the un-specified dial key corresponding to the non-dialing operation. It is desirable that the symbol is not a digit. The number of un-specified dial keys is at least two, one of said two non-specifying dial keys corresponds to the non-dialing operation to scroll the list to the descending order, and the other of said two non-specifying dial keys corresponds to the non-dialing operation to scroll the list to the ascending order. The scrolling in the descending order and the ascending order is especially effective in the telephone number searching operation.

[0008]

An operation apparatus of a portable phone according to the present invention, comprises dial keys, and a processing unit carrying out a non-dialing operation other than a dialing operation when an un-specified dial key which is not a specified dial key is operated. It is desirable that the operation apparatus further comprises a storage unit for storing names corresponding to a plurality of telephone numbers, a display unit for displaying the names stored in the storage unit, and a processing unit controlling the display unit to display the names when the non-specifying dial key is operated.

[0009]

The processing unit can control the display unit to display

the names in the descending order when one of the non-specifying dial keys is operated, and to display the names in the ascending order when the other one of the non-specifying dial keys is operated. The operation apparatus further comprises a recording medium, and the recording medium stores a telephone number search program. The recording medium stores a program to execute a step of carrying out the non-dialing operation other than the dialing operation when the un-specified dial key which is not a dial key is operated. It is effective that the recording medium is detachable to the concerned telephone.

[0010]

[Embodiment of the invention]

Referring to the attached drawings, in a operation apparatus of a portable phone according to an embodiment of the present invention, dial keys 2 are provided for a portable phone 1. Figs. 1 and 2 show the portable phone 1. The dial keys 2 are a unit used to manually input digits and so on. A signal corresponding to the dial key 2 is inputted to a processing unit 3. The processing unit 3 operates in accordance with a program control and is connected with a storage unit 4 and a display unit 5. Names and telephone numbers registered by a user are stored in the storage unit 4 which stores various data. The processing unit 3 controls the display unit 5 to display data in accordance with the input signal given from the dial key 2.

[0011]

As one embodiment, the dial key 2 of "2" and the dial key 2 of "5" are used for a telephone number searching operation. In order for the user to easily recognize that the dial key 2 of "2" and the dial key 2 of "5" are the keys which are used for the telephone number searching operation, an upward arrow "↑" is attached to the dial key 2 of "2" and a downward arrow "↓" is attached to the dial key 2 of "5", as shown in Fig. 2. It is desirable that the dial key 2 of "2" and the dial key 2 of "5" are formed in a special shape such as a triangle, such that the dial key 2 of "2" and the dial key 2 of "5" can be visually and easily distinguished from the keys other than them by the user.

[0012]

In many portable phones, a special number is first entered for a long-distance call. Generally, the special number is "0", "1" or "#".

Fig. 3 shows the steps in a method for the telephone number searching operation of the present invention. If the head of a character string or digit string inputted through the key operation is "0", "1" or "#" (step S1), the character string or digit string 5.1 is displayed on the display 5 including the character or digit at the head, as shown in Fig. 4 (Step S5). Fig. 4(a) shows "02012345678" as an example of such digit string 5.1. Fig. 4(b) shows "#1234" as another example.

[0013]

If the head of the digit string inputted through the key operation is "2" or "5" (Step S3), the names and the telephone numbers which are stored in the storage unit 4 are listed up and displayed in the order of "a-i-u-e-o" or alphabet, as shown in Fig. 5(a) (Step S4).

[0014]

When the head and end of the list are connected, it is supposed that the key "2↑" or key "5↓" is continuously pushed (Step S6). In this case, when the key "2↑" is pushed, the display 5 scrolls the list by one line in the upward direction and displays the scrolled list, as shown in Fig. 5(b). Also, When the key "5↓" is pushed, the display 5 scrolls the list by one line in the downward direction and displays the scrolled list, as shown in Fig. 5(c) (Step S7).

[0015]

In the above mentioned illustration, the key "2" and key "5" are selected. However, if any digit key is used which is not first used to input the telephone number in the dialing operation, any function may be allocated to the digit key.

As shown in Fig. 6, when a key "5 re" is first pushed, a destination telephone number record may be displayed. Similarly, by pushing a key "2↑", a key "4←", a key "6→", and a key "8↓", the selection of a function and the searching operation of a

telephone number may be carried out.

[0016]

Fig. 7 shows the operation apparatus of the portable phone according to another embodiment of the present invention. The operation apparatus 1' of this portable phone contains a recording medium 6 which stores a program for the telephone number searching operation. The semiconductor memory is the optimal for the portable phone as the recording medium 6. By the program read in from the program recording medium 6 by the processing unit 3', processing unit 3' operates. The processing unit 3' executes the processing which is identical with the processing of the processing unit 3 of Fig. 1.

[0017]

[Effect of the invention]

According to the operation method and operation apparatus of portable phone of the present invention, the retrieval of a telephone number is made quickly possible through only the operation of a dial key. Therefore, any key of exclusive use for the searching operation can be made unnecessary to be provided in addition to the dial keys and the number of parts can be reduced.

[Brief Description of the Drawings]

[Fig. 1]

Fig. 1 is a circuit block diagram showing the operation apparatus of the portable phone according to an embodiment of the present invention.

[Fig. 2]

Fig. 2 is a plan view showing the operation apparatus of the portable phone according to the embodiment of the present invention.

[Fig. 3]

Fig. 3 is a flow chart showing the operation of the portable phone according to the embodiment of the present invention.

[Fig. 4]

Figs. 4(a) and (b) are plan views shows a plurality of operating states of the operation apparatus of the portable phone according to the embodiment of the present invention.

[Fig. 5]

Figs. 6(a), (b) and(c) are plan views showing the other plurality of operating states of the operation apparatus of the portable phone according to the embodiment of the present invention.

[Fig. 6]

Fig. 6 is a plan view shows the operation apparatus of the portable phone according to another embodiment of the present invention.

[Fig. 7]

Fig. 7 is a circuit block diagram showing the operation apparatus of the portable phone according to another embodiment of the present invention.

[Explanation of the mark]

- 1: portable phone
- 2: dial key
- 3, 3': processing unit
- 4: storage unit
- 5: display unit
- 6: recording medium

[Document Name] Abstract

[Abstract]

[Object] The number of keys is not increased for the operation.

[Solving means] A processing unit is provided to carry out a non-dialing operation other than a dialing operation by operating an un-specified dial key which is not a specified dial key. Also, a storage unit to store the names corresponding to a plurality of telephone numbers, a display unit to display the names which are stored in the storage unit, and a processing unit to control the display unit to display the names when the un-specified dial key is operated. The processing unit controls the display unit to display the names such that the names are scrolled in the descending direction when one of the un-specified dial keys is operated, and such that the names are scrolled in the ascending direction when the un-specified dial key is operated. A function other than the dial function can be easily realized using the dial key.

[Selected drawing]

Fig. 2

提出日 平成11年 2月16日

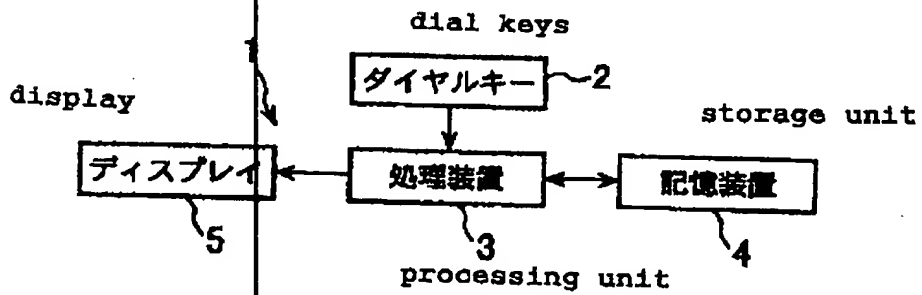
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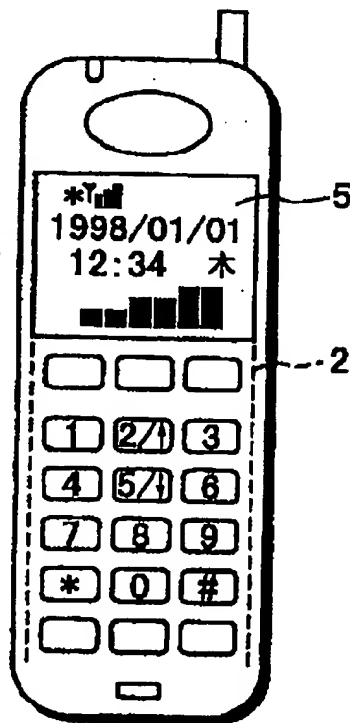
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【書類名】 図面 [Document Name] Drawings

【図1】 [Fig. 1]



【図2】 [Fig. 2]



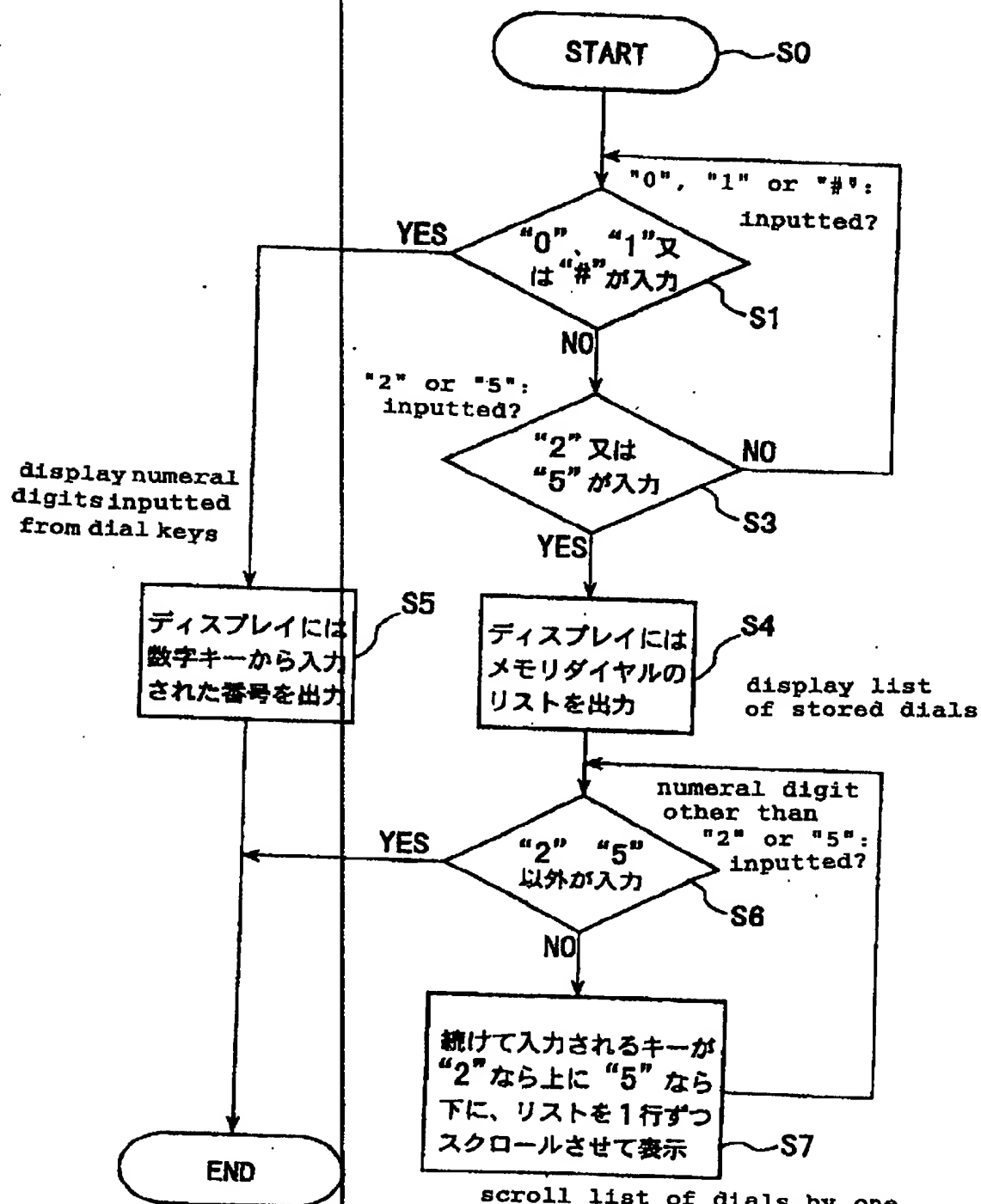
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【図3】 [Fig. 3]



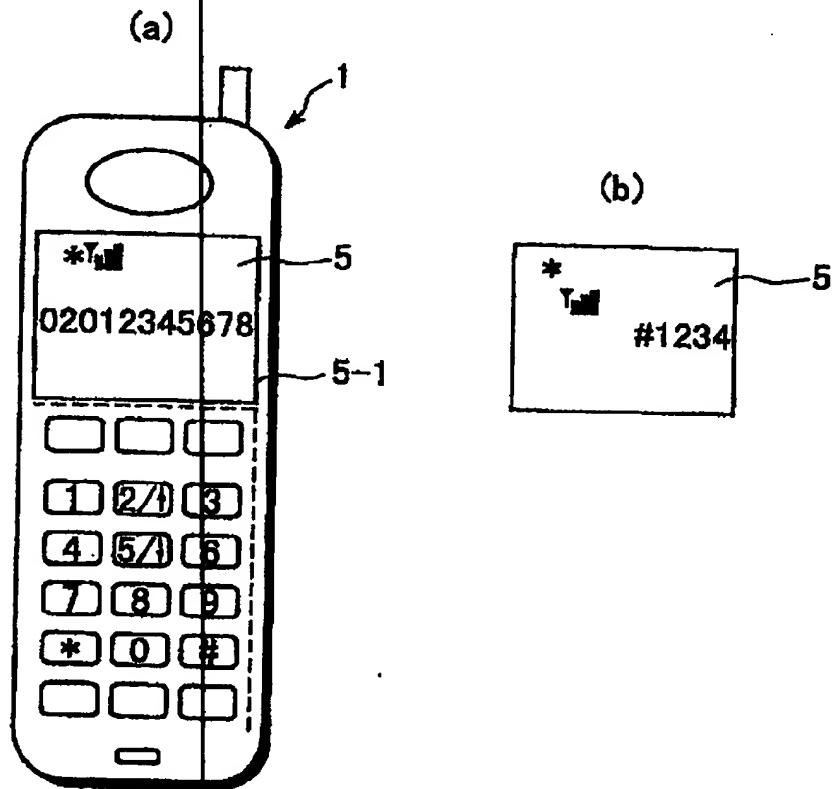
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【図4】 [Fig. 4]



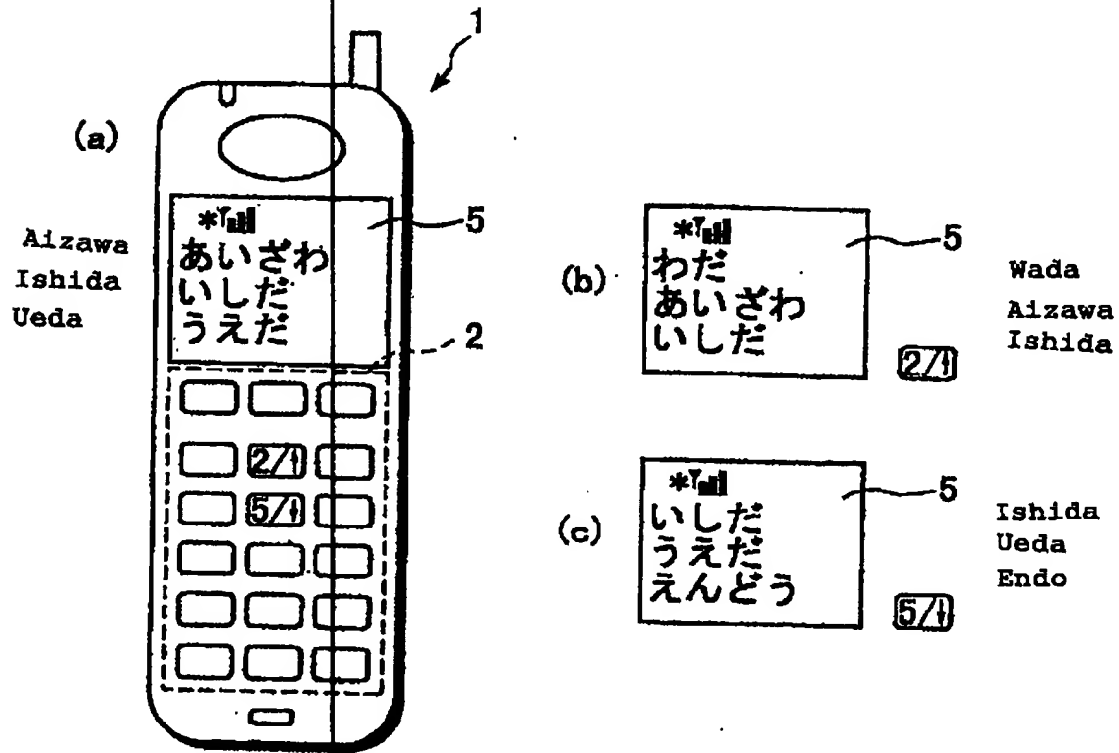
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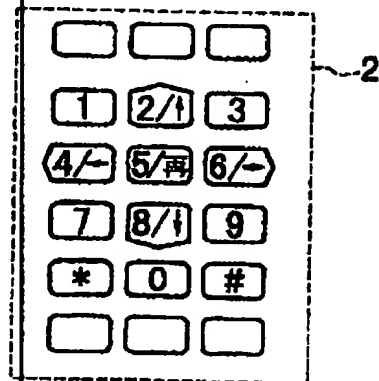
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【図5】 [Fig. 5]



【図6】 [Fig. 6]



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【図7】 [Fig. 7]

